

Errors in week 1 contents

1. Video lectures:

- (a) Lecture-1.1(Natural numbers and their operations)
Time- 19:15
Error: If $a \mid b$ then $a \bmod b = 0$
Correction: If $a \mid b$ then $b \bmod a = 0$
Explanation: The instructor states that “if a divides b then $a \bmod b = 0$ ”, which is not correct. It should have been “if a divides b then $b \bmod a = 0$ ”
- (b) Lecture-1.5(construction of subsets and set operations)
Time- 3:46
Error: The set of perfect squares is $\{1, 4, 9, 16, \dots\}$
Correction: The set of perfect squares is $\{0, 1, 4, 9, 16, \dots\}$
Explanation: The set, Professor writing on the screen should start with the 0 i.e. the set will be $\{0, 1, 4, 9, 16, 25\}$.
- (c) Lecture-1.5(construction of subsets and set operations)
Time- 4:08
Error: The set of rational numbers in reduced form is $\{\frac{p}{q} \mid p, q \in \mathbb{Z}, \gcd(p, q) = 1\}$
Correction: The set of rational numbers in rational form is $\{\frac{p}{q} \mid p, q \in \mathbb{Z}, q \neq 0, \gcd(p, q) = 1\}$
Explanation: In the set comprehension for the set of rational numbers in reduced form, $q \neq 0$ should be included in the slide.
- (d) Lecture-1.5(construction of subsets and set operations)
Time- 15:28
Error: Complement of the set of prime numbers in \mathbb{N} is the set of natural numbers.
Correction: Complement of the set of prime numbers in \mathbb{N} is the set of natural numbers, except 0 and 1.
Explanation: Prof. has said “complement of the set of prime numbers in \mathbb{N} is the set of composite numbers”. It is not true as 0 and 1 are neither prime nor composite.

(e) Lecture-1.7(Examples of Set Operations and Counting Problems)

Time- 1:10

Error: Complement of the set of prime numbers in \mathbb{N} is the set of natural numbers.

Correction: Complement of the set of prime numbers in \mathbb{N} is the set of natural numbers, except 0 and 1.

Explanation: Prof. has said “complement of the set of prime numbers in \mathbb{N} is the set of composite numbers”. It is not true as 0 and 1 are neither prime nor composite.

(f) Lecture-1.9(Relations: Examples)

Time- 2:35

Error: $A \times B \times A = \{(1, 1, 1), (1, 1, 4), \dots, (7, 49, 16), (7, 49, 49)\}$

Correction: $A \times B \times A = \{(1, 1, 1), (1, 1, 4), \dots, (7, 49, 4), (7, 49, 7)\}$

Explanation: In the slide the last two elements of the set $A \times B \times A$ should be $(7, 49, 4), (7, 49, 7)$.

2. Practice assignment solution Pdf:

(a) Question 3 solution:

Error: The set of all natural numbers which divide 100 is $\{2, 4, 5, 10, \dots, 50\}$

Correction: The set of all natural numbers which divide 100 is $\{1, 2, 4, 5, 10, 20, 25, 50, 100\}$

Explanation: 1 and 100 also divide 100. So, the set of all natural numbers which divide 100 contains 1 and 100.